

**ISSUER INFORMATION *feed* SERVICE**

**CERTIFICATION TESTING CASE**

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Modification History

|  |  |  |  |
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| 2.0 | 10 Oct 2009 | MD&CS | Initial version |
| 2.1 | 24 Apr 2023 | MDD | * Update of information   Rephrased wordings related to “HKEX” and added Application Service Providers |
| 3.0 | 10 Dec 2023 | MDD & IT | * Updated test case for IIS Technical Upgrade new Certification Test method * Updated test case in according to the login without password * Added test cases for rare failover scenario |
| 3.1 | 2 Feb 2024 | MDD | * Updated test cases for normal functions and site failover |

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# INTRODUCTION

## Overview

The intended readers of this document are the technical personnel of the Issuer Information *feed* Service (IIS) Information Vendors (collectively abbreviated as “Vendors”).

IIS is a system which distributes issuer information that includes Listed Company news, Exchange news of Stock Exchange of Hong Kong Limited (“the Exchange”) and issuer documents. IIS is designed to provide a flexible and advanced means to capture, categorize, package and distribute the documents with associated attachment files to the Vendors through a pre-defined XML message format.

## Scope

This document specifies the testing procedure of the data transmission between the IIS System and the application of Vendor.

This document provides the necessary testing information for the Vendor to prepare for the testing. However, the testing procedure and specifications could be changed and fine-tuned from time to time. Affected IIS Vendors will be informed accordingly.

# PRE-TESTING REQUIREMENT

## Installation of testing lines

Before any test can be conducted, the Vendor must install a pair of testing lines (either SDNet or HSTN). The Vendor is reminded that sufficient time must be allowed for line installation.

|  |  |
| --- | --- |
| **Item** | **Description** |
| Mode of transmission | IP based network |
| Communication line speed | Minimum 2Mbps, Recommend 4Mbps or above |
| Communication protocol | TCP/IP (port number 6800), FTP (port number 20, 21) |

For each subscriber identity, it is given a Username, two client-side allowable IP addresses, and four server-side IP addresses two for Data Delivery servers & two for FTP servers for Primary Site servers. For Secondary Site servers, two server-side IP addresses one for Data Delivery servers & one for FTP server will be provided. The maximum of 10 FTP concurrent connections will be allowed.

A network Configuration Information Sheet (CIS) will be provided for network setup upon successful installation of testing lines.

# Test Approach

Vendor to demonstrate the readiness of its connection to IIS.

1. All testing cases are mandatory in this document in order for the certification of the vendor software.
2. Vendor has to connect to IIS Certification Test Environment according to the test schedule and receive news and attachments. When it is required to map each news with the test case, Vendor could view <DataContent> field in each news, which is the test case ID.
3. Result verification and confirmation

Vendor should confirm that all the certification test cases are completed successfully by filling-in this document and return to [ivsupport@hkex.com.hk](mailto:ivsupport@hkex.com.hk).

Upon the answers filled in this document are verified and confirmed with positive result by HKEX, Vendor should return the IIS Certification Test Result Declaration Form on [IIS web corner](https://www.hkex.com.hk/Services/Market-Data-Services/Infrastructure/Issuer-Information-feed-Service-(IIS)?sc_lang=en).

# Testing Part

The test consists of the following four parts and each part focuses on a particular area:

Part 1 Test on Normal Functions

Part 2 Test on Exceptions

Part 3 Site Failover Test

Part 4 Test Cases Required Special Test Arrangement with HKEX

Details of tests conducted in different parts can be found in Appendix.

The testing cases will be running according to the test schedule below, except Part 4, and the Vendor should test its system thoroughly in each part. For Part 4, Vendor is required to contact [ivsupport@hkex.com.hk](mailto:ivsupport@hkex.com.hk) for special test arrangement and test cases will then be run with Vendor individually.

# Test Schedule

Please refer to the latest Test Schedule document posted on [IIS web corner](https://www.hkex.com.hk/Services/Market-Data-Services/Infrastructure/Issuer-Information-feed-Service-(IIS)?sc_lang=en).

# APPENDIX - Test Cases

## Part 1 – Test on Normal Functions

This part focuses on data transmission after successful logon, including headline transmission and attachment file download from FTP server. Please note Part 1 and Part 2 cases are mutually exclusive. Vendor has to perform Part 1 and Part 2 on two different testing days separately.

Certification Method:

In this part, vendors should logon and receive news from IIS following the test schedule. Then record down the required answer in each case below.

### Logon, Logoff and Status request

**Objective**

To test whether the Vendor’s software can successfully access to IIS. Please fill-in the completion date/time for our further checking.

#### Case 1 – Normal Logon and Logoff

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Test Cases | Expected Result | **Please fill- in the completion date/time** |
| 1 | Initiate a connection with the primary link after IIS is brought up. | Check that Response Message is received. | Click or tap here to enter text. |
| 2 | Send a Logon Request with valid user name and allowable IP address. | Check that Logon Response Message is received. |
| 3 | Send a Logoff Request. | Check that the session is disconnected with IIS |
| 4 | Repeat 1 to 3 for again within 2 minutes | No DUPLICATE\_LOGON error code is received. |

#### Case 2 - FTP Server Logon

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Test Cases | Expected Result | **Please fill- in the completion date/time** |
| 1 | Logon to FTP Server with anonymous. | Successful logon to FTP Server. | Click or tap here to enter text. |

#### Case 3 – Duplicate logon

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Test Cases | Expected Result | **Please list out the error code received in the secondary session** |
| 1 | Initiate a connection with the primary link after IIS is brought up. | Check that Initialization Response Message is received. | Click or tap here to enter text. |
| 2 | Send a Logon Request with valid username and allowable IP address. | Check that Logon Response Message is received. |
| 3 | Repeat 1 to 2 with the same username on another session | Check that an Error code is received in the secondary session and the primary session is disconnected. |
| 4 | Reconnect to IIS either the primary or secondary session in 3 seconds. | Check that Response Message is received. |

#### Case 4 – Status Request

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Test Cases | Expected Result | **Please fill- in the completion date/time** |
| 1 | Initiate a connection with the primary link after IIS is brought up. | Check that Response Message is received. | Click or tap here to enter text. |
| 2 | Send a Logon Request with valid username and allowable IP address. | Wait for 120 seconds, check that Logon Response Message is received. |
| 3 | Send Status Response to IIS. | Check that the session stays connected with IIS. |

### Headlines and attachments dissemination

**Objective**

To test whether the Vendor’s software can successfully handle different type of headlines.

#### Case 1 – Single attachment file News for both Exchange and Issuer News

|  |  |  |
| --- | --- | --- |
| Test Cases | Expected Result | Please fill-in the value of the following field |
| Two types of single file news – Exchange and Issuer News | Check that all news headlines for FIRSTTAKE and SUBTAKE are received.  Verify the FIRSTAKE and SUBTAKE for the following contents: Stock Code (Issuer News only), Stock Name (Issuer News only), Tier1, Tier2, Market Code, No of Content Item, and Language Formal Name. | **Attachment name of the Exchange News:**  Click or tap here to enter text.  **Attachment name of the Issuer News:**  Click or tap here to enter text. |
| Download attachment file from FTP server with corresponding URL inside the SUBTAKE. | Verify the attachment by using the digest and size information embedded in SUBTAKE. | **File size of the Exchange News’ attachment:**  Click or tap here to enter text.  **File size of the Issuer News’ attachment:**  Click or tap here to enter text. |

Case 2 – Multiple attachment file News

|  |  |  |
| --- | --- | --- |
| Test Cases | Expected Result | Please fill-in the value of the following field |
| Multiple file news | Check that all news headlines for FIRSTAKE and SUBTAKE are received.  Verify the FIRSTAKE and SUBTAKE for the following contents: Stock Code, Stock Name, Tier1, Tier2, Market Code, No of Content Item, and Language Formal Name. | **Number of attachments received:**  Click or tap here to enter text. |

#### Case 3 – News with Tier1, Tier2 headline category code

|  |  |  |
| --- | --- | --- |
| Test Cases | Expected Result | Please fill-in the value of the following field |
| News with Tier1, Tier2 headline category code. | Check that all news headlines for FIRSTAKE and SUBTAKE are received.  Verify the FIRSTAKE and SUBTAKE for the following contents: Stock Code, Stock Name, Tier1, Tier2, Market Code, No of Content Item, and Language Formal Name. | **<Headline Category-T1>:**  Click or tap here to enter text. |

#### Case 4 – News with Tier1 headline category code only

|  |  |  |
| --- | --- | --- |
| Test Cases | Expected Result | Please fill-in the value of the following field |
| News with Tier1 only headline category code. | Check that all news headlines for FIRSTAKE and SUBTAKE are received.  Verify the FIRSTAKE and SUBTAKE for the following contents: Stock Code, Stock Name, Tier1, Tier2, Market Code, No of Content Item, and Language Formal Name. | **<Headline Category-T1>:**  Click or tap here to enter text. |

#### Case 5 – News with miscellaneous Tier1 and Tier2 headline category code

|  |  |  |
| --- | --- | --- |
| Test Cases | Expected Result | Please fill-in the value of the following field |
| News with miscellaneous Tier1 and Tier2 headline category code. | Check that all news headlines for FIRSTAKE and SUBTAKE are received.  Verify the FIRSTAKE and SUBTAKE for the following contents: Stock Code, Stock Name, Tier1, Tier2, Market Code, No of Content Item, and Language Formal Name. | **<Headline Category-T2>:**  Click or tap here to enter text. |

#### Case 6 – News with dummy stock code

|  |  |  |
| --- | --- | --- |
| Test Cases | Expected Result | **Please select the correct value of <Stock Code>** |
| News with dummy stock code. | Check that all news headlines for FIRSTAKE and SUBTAKE are received.  Verify the FIRSTAKE and SUBTAKE for the following contents: Stock Code, Stock Name, Tier1, Tier2, Market Code, No of Content Item, and Language Formal Name. | 1. “99999” 2. “99998” 3. No such field in the log   Click or tap here to enter text. |

#### Case 7 – News with stock code

|  |  |  |
| --- | --- | --- |
| Test Cases | Expected Result | Please fill-in the value of the following field |
| News with stock code | Check that all news headlines for FIRSTAKE and SUBTAKE are received.  Verify the FIRSTAKE and SUBTAKE for the following contents: Stock Code, Stock Name, Tier1, Tier2, Market Code, No of Content Item, and Language Formal Name. | **The first <Stock Code>:**  Click or tap here to enter text. |

#### Case 8 – News with market code

|  |  |  |
| --- | --- | --- |
| Test Cases | Expected Result | Please fill-in the value of the following field |
| News with market code | Check that all news headlines for FIRSTAKE and SUBTAKE are received.  Verify the FIRSTAKE and SUBTAKE for the following contents: Stock Code, Stock Name, Tier1, Tier2, Market Code, No of Content Item, and Language Formal Name. | **<Mkt Code>:**  Click or tap here to enter text. |

#### Case 9 – Amendment of Issuer News– Single file

|  |  |  |
| --- | --- | --- |
| Test Cases | Expected Result | Please fill-in the value of the following field |
| * Normal news with single file * 1st amendment made * 2nd amendment made | Check that all news headlines for   * + FIRSTAKE   + SUBTAKE   + 1st CANCELLED news for amendment   + 1st AMENDED news and corresponding SUBTAKE   + 2nd CANCELLED news for amendment   + 2nd AMENDED news and corresponding SUBTAKE   are received.  Verify the FIRSTAKE, SUBTAKE, CANCELLED and AMENDED news for the following contents: Stock Code, Stock Name, Tier1, Tier2, Market Code, No of Content Item, and Language Formal Name. | **The latest <Headline Category-T2>:**  Click or tap here to enter text. |

#### Case 10 – Amendment Issuer News– Multiple file

|  |  |  |
| --- | --- | --- |
| Test Cases | Expected Result | Please fill-in the value of the following field |
| * Normal news with multiple files. * Amendment made | Check that all news headlines for   * + FIRSTAKE   + SUBTAKE   + CANCELLED news for amendment   + AMENDED news and corresponding SUBTAKE   are received.  Verify the FIRSTAKE, SUBTAKE, CANCELLED and AMENDED news for the following contents: Stock Code, Stock Name, Tier1, Tier2, Market Code, No of Content Item, and Language Formal Name. | **The latest <Headline Category-T2>:**  Click or tap here to enter text. |

#### Case 11 – Cancellation of Issuer News

|  |  |  |
| --- | --- | --- |
| Test Cases | Expected Result | Please fill-in the value of the following field |
| * Normal news * News cancelled | Check that all news headlines for   * + FIRSTAKE,   + SUBTAKE   + CANCELLED news   are received.  Verify the FIRSTAKE, SUBTAKE and CANCELLED news for the following contents: Stock Code, Stock Name, Tier1, Tier2, Market Code, No of Content Item, and Language Formal Name. | **<DateLine>:**  Click or tap here to enter text. |

#### Case 12 – Update of Issuer News under Straight through process

|  |  |  |
| --- | --- | --- |
| Test Cases | Expected Result | Please fill-in the value of the following field |
| * Normal news. * News updated | Check that all news headlines for   * + FIRSTAKE   + SUBTAKE   + UPDATED news and the corresponding SUBTAKE are received.   Verify the FIRSTAKE, SUBTAKE, UPDATED news for the following contents: Stock Code, Stock Name, Tier1, Tier2, Market Code, No of Content Item, and Language Formal Name. | **The Updated <Stock Code>:**  Click or tap here to enter text. |

#### Case 13 – Deletion of Issuer News

|  |  |  |
| --- | --- | --- |
| Test Cases | Expected Result | Please fill-in the value of the following field |
| * Normal news. * News deleted | Check that all news headlines for   * + FIRSTAKE,   + SUBTAKE   + DELETED news   are received  Verify the FIRSTAKE, SUBTAKE for the following contents: Stock Code, Stock Name, Tier1, Tier2, Market Code, No of Content Item, and Language Formal Name. | **<DateLine>:**  Click or tap here to enter text. |

#### Case 14 – Cancellation of Exchange News

|  |  |  |
| --- | --- | --- |
| Test Cases | Expected Result | Please fill-in the value of the following field |
| * Exchange news. * News cancelled | Check that all news headlines for   * FIRSTAKE * SUBTAKE * CANCELLED news   are received.  Verify the FIRSTAKE, SUBTAKE for the following contents: Stock Code, Stock Name, Tier1, Tier2, Market Code, No of Content Item, and Language Formal Name. | **The <DateLine> of CANCELLED news:**  Click or tap here to enter text. |

#### Case 15 – News with HKSCS characters

|  |  |  |
| --- | --- | --- |
| Test Cases | Expected Result | **Please select the correct value of <DataContent>** |
| 2 news with HKSCS characters | Check that all news headlines for FIRSTAKE and SUBTAKE are received.  Verify the FIRSTAKE and SUBTAKE for the following contents: Stock Code, Stock Name, Tier1, Tier2, Market Code, No of Content Item, and Language Formal Name. | 1. 䤵䦡䪤䬷䮗䰾䲅䴐両丽亇从伲侫俹偬僡兪冨 2. 䤵䦡䪤䬷䮗䰾䲅䴐 3. 亇从伲侫俹偬僡兪冨   Click or tap here to enter text. |

## Part 2 – Test on Exceptions

This part focuses on communication link failure and recovery processing. Please note Part 1 and Part 2 cases are mutually exclusive. Vendor has to perform Part 1 and Part 2 on two different testing days separately.

Certification Method:

In this part, vendors should strictly follow the test schedule and test case to logon and perform recovery. Then record down the required answer in each case below.

### Headlines Full Recovery

**Objective**

To test whether the Vendor’s software can successfully perform full headline recovery.

#### Case 1 – Full recovery at the start of the day

|  |  |  |  |
| --- | --- | --- | --- |
| Timing | Test Cases | Expected Result | Please fill-in the value of the following fields |
| Right after  “IIS start-up” and before “News dissemination - AM” session | Perform successful logon to IIS.  Logon to FTP Server with anonymous. | Successful logon to FTP and Data Delivery Server. | **Number of headlines recovered:** Click or tap here to enter text.  **Number of attachments recovered:**  Click or tap here to enter text. |
| Send a Full Recovery Request to IIS. | Check that Recovery Response |
| Send a Logoff Request to IIS and quit the current IIS session | Disconnected with IIS |  |

#### Case 2 – Normal full recovery

This case continues from Case 1 above. Please do not logon IIS after the completion of Case 1 and before the start of Case 2.

|  |  |  |  |
| --- | --- | --- | --- |
| Timing | Test Cases | Expected Result | Please fill-in the value of the following fields |
| After Case 1 and wait until “Break” session | Perform successful logon to IIS.  Logon to FTP Server with anonymous. | Successful logon to FTP and Data Delivery Server. | **Number of headlines recovered:**  Click or tap here to enter text.  **Number of attachments recovered:**  Click or tap here to enter text. |
| Send Full Recovery Request to IIS. | Check that Recovery Response |
| Ignore Duplicate Headlines received from Case 1 (if any). | Check that Recovery Complete Message is received after all Recovery Headlines are received in reverse chronological order. |
| Download attachment file from FTP server with corresponding URL inside the SUBTAKE. | Verify the attachment by using the digest and size information embedded in SUBTAKE. |

#### Case 3 – Invalid Multiple Full Recovery

This case continues from Case 2 above.

|  |  |  |  |
| --- | --- | --- | --- |
| Timing | Test Cases | Expected Result | **Please fill-in the error code received** |
| Right after Case 2 and still during the “Break” session | In same connection session as Case 2, issue Full Recovery Request to IIS again. | Check that Error Message is received | Click or tap here to enter text. |
| Send a Logoff Request to IIS | Disconnected with IIS |  |

### Headlines Partial Recovery

**Objective**

To test whether the Vendor’s software can successfully perform partial headline recovery.

#### Case 1 – Valid partial recovery

This case continues from the Full Recovery cases above. Please do not logon IIS after the completion of Headlines Full Recovery Case 3 and before the start of Headlines Partial Recovery Case 1.

|  |  |  |  |
| --- | --- | --- | --- |
| Timing | Test Cases | Expected Result | Please fill-in the value of the following fields |
| After　“News dissemination – PM” Session and before “IIS Shutdown” | Perform successful logon to IIS.  Logon to FTP Server with anonymous. | Successful logon to FTP and Data Delivery Server. | **Number of headlines recovered:**  Click or tap here to enter text.  **Number of attachments recovered:**  Click or tap here to enter text. |
| Send Partial Recovery Request with the last headline sequence number received from IIS from Full Recovery Cases. | Check that Recovery Response with latest news is received.  Check that all Recovery Headlines are received.  Check that Recovery Complete Message is received after all Recovery Headlines are received in reverse chronological order. |
| Download attachment file from FTP server with corresponding URL inside the SUBTAKE. | Verify the attachment by using the digest and size information embedded in SUBTAKE. |
| Send a Logoff Request to IIS | Disconnected with IIS |

#### Case 2 – Partial recovery without News Item

This case continues from Case 1 above

|  |  |  |  |
| --- | --- | --- | --- |
| Timing | Test Cases | Expected Result | Please fill-in the value of the following fields |
| Right after Case 1 and before “IIS Shutdown” | Perform successful logon to IIS.  Logon to FTP Server with anonymous. | Successful logon to FTP and Data Delivery Server. | **Number of headlines recovered:**  Click or tap here to enter text.  **Number of attachments recovered:**  Click or tap here to enter text. |
| Send a Partial Recovery Request with the last **headline sequence number received** from Case 1. | Check that Recovery Response is received. |
| Send a Logoff Request to IIS | Disconnected with IIS |

#### Case 3 – Invalid partial recovery

This case continues from Case 2 above

|  |  |  |  |
| --- | --- | --- | --- |
| Timing | Test Cases | Expected Result | **Please fill-in the error code received** |
| Right after Case 2 and before “IIS Shutdown” | Perform successful logon to IIS.  Logon to FTP Server with anonymous. | Successful logon to FTP and Data Delivery Server. | Click or tap here to enter text. |
| Send Partial Recovery with the Invalid Headline Sequence Number = 10000 | Check that Error Message is received. |

### FTP

#### Case 1 – Handle concurrent connection for FTP Server

|  |  |  |  |
| --- | --- | --- | --- |
| Timing | Test Cases | Expected Result | **Please fill-in the error code received** |
| Any time between “IIS start-up” and “IIS Shutdown” | Perform successful logon to IIS.  Logon to FTP Server with anonymous. | Successful logon to FTP and Data Delivery Server. | Click or tap here to enter text. |
| Create 10 concurrent connections to FTP Server. | Check that all 10 logon are successful connected to FTP Server. |
| Create one additional one connection to FTP Server. | Check that error code is received from FTP Server. |

## Part 3 – Site Failover Test

**Objective**

To test whether the Vendor’s software can handle IIS system fail over to DR site. The Vendor will be connecting to the testing IIS systems for the primary and DR sites in our Certification Test environment.

Before performing the test case in this section, vendor should follow the guidance and procedure in the latest IIS Transmission Specification on [IIS web corner](https://www.hkex.com.hk/Services/Market-Data-Services/Infrastructure/Issuer-Information-feed-Service-(IIS)?sc_lang=en).

Certification Method:

In this part, vendors should strictly follow the test schedule and test case to perform the testing. Then record down the required answer in each case below.

### Case 1 – Normal failover: IIS in Primary Site “IIS(PR)” Failure

|  |  |  |  |
| --- | --- | --- | --- |
| **Step** | **Test Cases** | **Expected Result** | Please fill-in the value of the following fields |
| 1 | IIS in Primary Site and DR site will send 6 issuer news including:   * 5 single file news * 1 multiple file news   Then   * 1 news amendment * 1 news cancellation * 1 news update * 1 news delete   (In summary, 1 single file news and 1 multiple file news remain unchanged. While 4 single file news have further action) | 5 original news (FIRSTTAKE and SUBTAKE) are received.  1 original news (FIRSTTAKE and SUBTAKE) with multiple attachments are received.  Then following news are received:   * CANCELLED news for amendment, AMENDED news and corresponding SUBTAKE   + CANCELLED news   + UPDATED news and corresponding SUBTAKE   + DELETED news | **Number of headlines received:**  Click or tap here to enter text.  **Number of attachments received:**  Click or tap here to enter text. |
| 2 | IIS in Primary Site and DR Site will send 1 exchange news  Then 1 exchange news cancellation | 1 original news (FIRSTTAKE and SUBTAKE) and 1 CANCELLED News are received. |
| 3 | IIS in Primary Site will shutdown | Sessions connected to IIS Primary Site will be disconnected.  Sessions connected to IIS DR Site will remain connected normally. |  |
| 4 | If DR session is not established before, clear internal cache and send logon request to DR site and complete the logon process as usual  Issue full recovery request | Successful logon to FTP and IIS Server  Recovery news are received in reverse chronological order (all news in step 1 and 2 are recovered). The sequence number for news sent by IIS in DR Site synchronized with that sent in the primary site. |  |
| 5 | IIS in DR site will send 1 issuer news | 1 original news (FIRSTTAKE and SUBTAKE) are received with sequence number continues after all news in Primary Site. | **<Stock Code> of the headlines with**  **< UPDATEHEADLINE>:**  Click or tap here to enter text. |
| 6 | IIS in all sites shutdown.  All data and cache cleared | Vendors should clear all internal cache before entering Case 2 below. |  |

### Case 2 – Rare failover: IIS(PR) Failure and IIS in Secondary Site “IIS(DR)” restarted

|  |  |  |  |
| --- | --- | --- | --- |
| **Step** | **Test Cases** | **Expected Result** | Please fill-in the value of the following fields |
| 1 | IIS in Primary Site and DR site will send 6 issuer news including:   * 5 single file news * 1 multiple file news   Then   * 1 news amendment * 1 news cancellation * 1 news update * 1 news delete   (In summary, 2 single file news and 1 multiple file news remain unchanged. While 4 single file news have further action) | 5 original news (FIRSTTAKE and SUBTAKE) are received.  1 original news (FIRSTTAKE and SUBTAKE) with multiple attachments are received.  Then following news are received:   * CANCELLED news for amendment, AMENDED news and corresponding SUBTAKE   + CANCELLED news   + UPDATED news and corresponding SUBTAKE   + DELETED news | **Number of headlines received:**  Click or tap here to enter text.  **Number of attachments received:**  Click or tap here to enter text. |
| 2 | IIS in Primary Site and DR Site will send 1 exchange news  Then 1 exchange news cancellation | 1 original news (FIRSTTAKE and SUBTAKE) and 1 CANCELLED News are received. |
| 3 | IIS in Primary Site will shutdown and IIS in DR Site will be restarted | Sessions connected to IIS Primary Site will be disconnected.  Sessions connected to IIS DR Site will be disconnected and then open to be connected |  |
| 4 | Clear internal cache and send logon request to DR site and complete the logon process as usual | Successful logon to FTP and IIS Server |  |
| 5 | Issue full recovery request | 8 Recovery news of **LATEST** image will be received:   * + 1 CANCELLED exchange news   + 1 DELETED news   + 1 UPDATED news and SUBTAKE   + 2 CANCELLED news   + 1 AMENDED news, SUBTAKE and CANCELLED news   + 1 Multiple file news with FIRSTTAKE and SUBTAKE   + 1 Single file news with FIRSTTAKE and SUBTAKE   Under this rare failover scenario, the order and sequence of receiving the above news might not be the same as Step 1 & 2. In addition, it is possible for IIS to disseminate the real time news headlines together with the recovery news headlines simultaneously. Vendors may receive real time news headlines which <MSg ID> as UPDATEHEADLINE while receiving recovery headlines which <MsgID> as RECVYHEADLINE from the full recovery request.  As such, the sequence number for news sent by IIS in DR Site will **NOT** be synchronized with that sent in Step 1 & 2. | **<NewsItemId> of the news with SeqNo “13”**  Click or tap here to enter text.  **Please select the correct value of the LASTEST message type of the news with title “Test04: This case is aim to test EDS input including English news with Tier 1 + Tier 2 headline with DOCX attachment with English file name” after failover:**   1. FIRSTTAKE 2. CANCELLED 3. UPDATED   Click or tap here to enter text. |

## Part 4 – Test Cases Required Special Test Arrangement with HKEX

For Part 4, Vendor is required to contact [ivsupport@hkex.com.hk](mailto:ivsupport@hkex.com.hk) for special test arrangement and test cases will then be run with Vendor individually.

Certification Method:

In this part, vendors have to work with HKEX back-and-forth according to the test cases. After verification of expected result, fill-in the required answer in the box below.

### Logon retry exhausted

#### Case 1 – Logon retry exhausted

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Test Cases | Expected Result | **Please fill- in the completion date/time** |
| 1 | Initiate a connection with the primary link after IIS is brought up. | Check that Initialization Response Message is received. | Click or tap here to enter text. |
| 2 | Send a Logon Request with invalid username / allowable IP address. | Check that INCORRECT\_VENDOR Message (Error code - 90010) is received. |
| 3 | Repeat 1 to 2 for 9 consecutive logon with valid username, but invalid allowable IP address. |  |
| 4 | Subscriber service is suspended by IIS. | Check that  PERMISSION\_DROP Message (Error code - 90002) is received after 9 invalid logon requests from invalid IP address.  Inform us to reset to resume the IIS service. |
| 5 | Request HKEX to unlock account | The account can be logon again |  |

### Handle Recovery Headlines and Normal Headlines simultaneously

#### Case 1 – Handle Recovery Headlines and Normal Headlines simultaneously

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Test Cases | Expected Result | **Please fill- in the completion date/time** |
| 1 | Perform successful logon to IIS.  Logon to FTP Server with anonymous. | Successful logon to FTP and Data Delivery Server. | Click or tap here to enter text. |
| 2 | Simulation program will be run to send news for 5 minutes. | Check that all headlines for FIRSTTAKE and SUBTAKE are received. |
| 3 | Download attachment file from FTP server with corresponding URL inside the SUBTAKE | Verify the attachment by using the digest and size information embedded in SUBTAKE. |
| 4 | Send a Logoff Request to IIS  News will be continued to send for 5 minutes  Perform successful connection to IIS.  Send a Logon Request and Partial Recovery Request with the last headline sequence number to IIS.  News will be continued to send for 5 minutes | Check that Recovery Response Message with number of Recovery Headline is received.  Check that Normal Headlines are received.  Check that Recovery Complete Message is received after Recovery Headlines are completely received in reverse chronological order. |
| 5 | Download attachment file from FTP server for both Normal and Recovery headlines received. | Verify the attachment by using the digest and size information embedded in SUBTAKE. |

### Volume / Stress Test

**Objective**

To test whether the Vendor’s software can handle high transaction volume.

#### Case 1 - Handle high transaction volume

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Test Cases | Expected Result | **Please fill- in the completion date/time** |
| 1 | Perform successful logon to IIS.  Logon to FTP Server with anonymous. | Successful logon to FTP and Data Delivery Server. | Click or tap here to enter text. |
| 2 | High volume of news headlines will be sent | Check that all news headlines for FIRSTAKE and SUBTAKE are received. |
| 3 | Download attachment file from FTP server with corresponding URL inside the SUBTAKE | Verify the attachment by using the digest and size information embedded in SUBTAKE. |
| 4 | Some disconnection will be executed during the normal receive and status request period. | Check that the application is able to reconnected to IIS to initiate logon.  Verify the attachment by using the digest and size information embedded in SUBTAKE. |

### IIS Servers Exceptions

**Objective**

To test whether the Vendor’s software can handle the following IIS Servers exceptions.

#### Case 1 – Auto Reconnection after interruption of IIS Server

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Test Cases | Expected Result | **Please fill- in the completion date/time** |
| 1 | Initiate a connection with the primary link after IIS is brought up. | Check that Initialization Response Message and an encrypted session key is received. | Click or tap here to enter text. |
| 2 | Send a Logon Request with valid username and allowable IP address. | Check that Logon Response Message is received. |
| 3 | IIS Server is shut down |  |
| 4 | IIS Server is brought up | Auto Logon after IIS Server bring up within 5 minutes |

#### Case 2 – FTP Server failure

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Test Cases | Expected Result | **Please fill- in the completion date/time** |
| 1 | Perform successful logon to IIS.  Logon to FTP Server with anonymous. | Successful logon to FTP and Data Delivery Server. | Click or tap here to enter text. |
| 2 | Simulation program will be run to send **30** **News**. | Check that all 30 headlines for FIRSTTAKE and SUBTAKE are received. |
| 3 | Download some attachment files from FTP server with corresponding URL inside the SUBTAKE.  FTP Server will be restarted. | Check that some attachment files are received with correct digest and size. |
| 4 | Reconnect to FTP server and download the incomplete attachment file from FTP server with corresponding URL inside the SUBTAKE. | Verify the attachment by using the digest and size information embedded in SUBTAKE. |

#### Case 3 - After IIS failover to DR Site, fallback and reconnecting to IIS in Primary Site

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Test Cases** | **Expected Result** | **Please fill- in the completion date/time** |
| 1 | Sequence number will be reset in primary site | The sequence number for news after site failover starts from 1 | Click or tap here to enter text. |
| 2 | Send logon request to primary site and complete the logon process as usual  Issue full recovery request | Successful logon to FTP and Data Delivery Server  Recovery Response is received |
| 3 | 5 Issuer news will be generated – Single File | * 5 original news (FIRSTTAKE and SUBTAKE) are received. |
| 4 | 5 Issuer news will be generated – Multiple File | Vendor should receive  5 original news (FIRSTTAKE and SUBTAKE) with multiple attachments are received |
| 5 | Exchange news will be generated   * Generate 1 Exchange news * Generate 1 Exchange cancellation news * Generate additional Exchange news | 2 original news (FIRSTTAKE and SUBTAKE) and 1 CANCELLED News are received. |